FUTURE FISHERIES IMPROVEMENT PROGRAM
GRANT APPLICATION
(please fill in the highlighted areas)

I. APPLICANT INFORMATION

A. Applicant Name: Big Hole Watershed Committee (BHWC)

B. Mailing Address: P.O. Box 21

C. City: Divide State: MT Zip: 59727

Telephone: 406-960-4855 E-mail: jdowning@bhwc.org

D. Contact Person: Jennifer Downing, Executive Director

Address if different from Applicant:

City: State: Zip:

Telephone: E-mail:

E. Landowner and/or Lessee Name (if other than Applicant): MT Fish Wildlife and Parks

Mailing Address: 1820 Meadowlark Lane

City: Butte State: MT Zip: 59701

Telephone: 406-494-2082 E-mail: vboccadori@mt.gov

II. PROJECT INFORMATION*

A. Project Name: French Gulch Placer Mining Restoration

River, stream, or lake: French Gulch (French Creek)

Location: Township: 2N Range: 11W Section: 5,6
Latitude: 45.956422 Longitude: 113.021775 *within project (decimal degrees)*

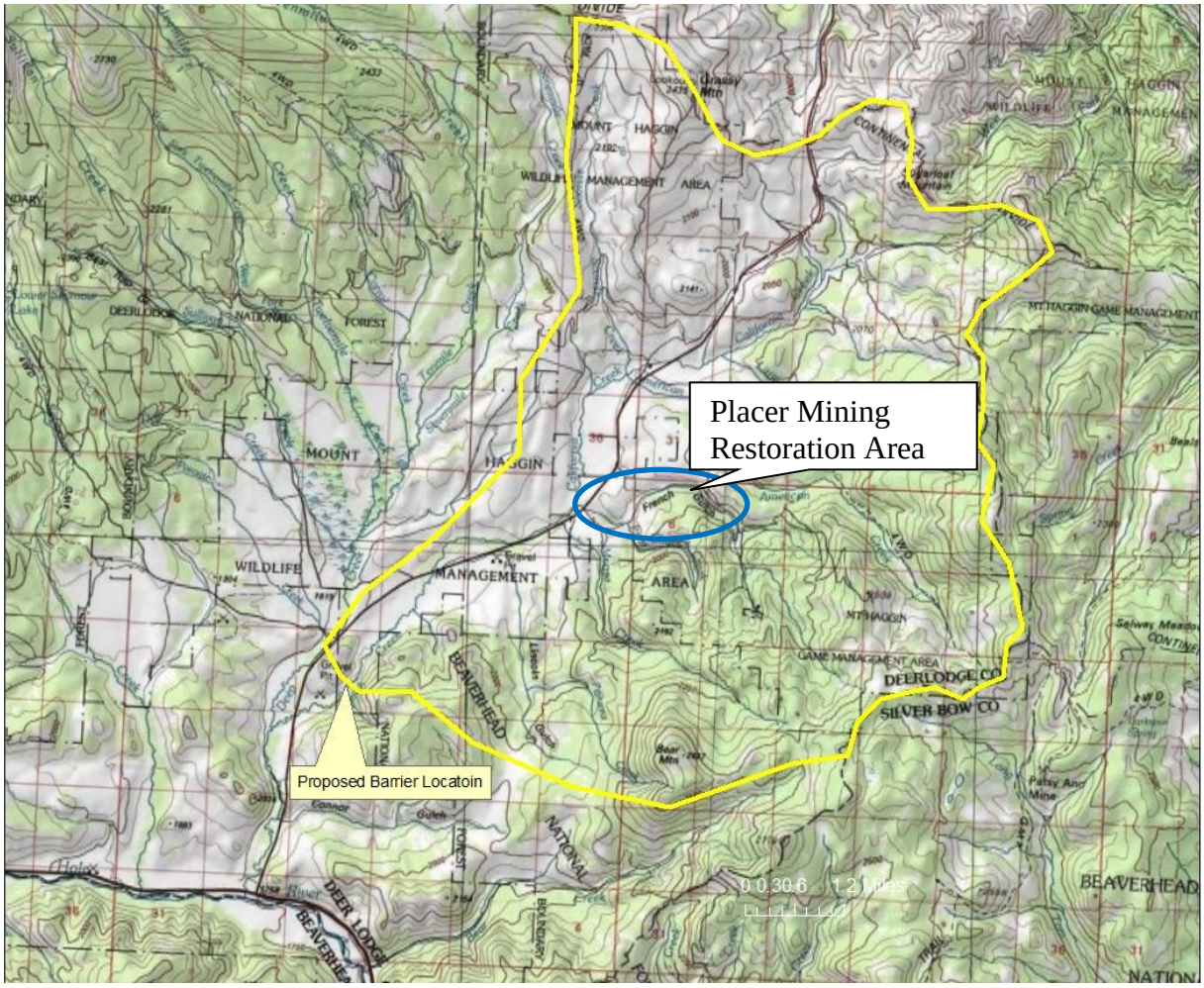
County: Deer Lodge

B. Purpose of Project:

The purpose of this project is to restore stream and floodplain function, wetlands and the fish passage to French Gulch which was impacted by past placer mining activities. Restoration Reach 1 and 2 were funded previously and we are requesting funding for Reaches 3-5 and culvert removal at the head of reach 5.

C. Brief Project Description:

The purpose of this project is to restore placer mined reaches of French Gulch (Map 1). French Gulch was the first gold strike in the Big Hole River drainage in the 1860's. Placer mining occurred in the drainage through the early 1900's. More than 5 miles of stream have been impacted to varying degrees by placer mining practices resulting in a straightened stream channel, the presence of large dredge spoils, increased stream gradient, reduced riparian area width and isolation of the stream from its floodplain. The straightened channel has resulted in poor fish habitat dominated by riffles with few pools or spawning gravels and a limited riparian area (Figure 1). French Gulch likely served as an important spawning and rearing tributary to French Creek prior to mining. Further, the straight channel and lack of a floodplain increases fine sediment erosion and transportation to French Creek downstream. In some reaches of the stream large gravel spoils pile have become vegetated by upland species such as sage brush and lodgepole pine which have replaced the former riparian vegetation. The goal of this project is to restore stream and floodplain function to the lower 3 miles of French Gulch impacted by placer mining activities.



Map 1. French Creek watershed (outlined in yellow) and the French Gulch Mining area (circled in blue) located approximately 20 miles south of Anaconda.

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Figure 1. Photos of Priority Restoration Reach 2 with the most severe placer mining impacts. Riparian area is very limited and stream is eroding sediments from dredge piles and adjacent hill slopes.

A planning grant was obtained by the Deerlodge Valley Conservation District from the DNRC Reclamation and Development Grant Program for the development of a design to restore French Gulch. Morrison and Maierle Inc. were contracted in 2013 to develop the restoration design. Five Restoration Areas were identified in the lower 3 miles of stream to have full stream channel and floodplain restoration and there is a total of 8,076 ft of stream in these reaches (see attached 80% Engineering Drawings) slated for restoration. These areas were identifies as the most impacted and the ones that could provide the greatest benefit to aquatic and riparian habitat if they were restored. Restoration Areas 1 and 2 consist of the most severely impacted reaches of French Gulch in the lower 3 miles (See Figure 1). In these reaches of stream there are large gravel piles (> 6 ft) that severely restrict the stream and floodplain. Restoration in these high priority areas would have the greatest benefit to stream and floodplain function. There are 6,132 ft of stream that would be restored in Restoration Reaches 1 and 2. FFIP has provided funding for Restoration Reach 1 during the last funding cycle. Restoration areas 3-5 are in reaches of stream with fewer remaining visible impacts of placer mining (i.e., the area lacks large piles of gravel restricting the floodplain). However, the stream in this reach is straight and lacks pool features. The riparian area in this reach is also well established because of the lack of large dredge piles, but the fisheries habitat is poor due to the lack of pools and preponderance higher gradient riffles (see attached Geomorphic Memo). The Restoration Areas in this upper reach are generally shorter (1,944 ft total) and involve less removal of material to establish a more sinuous stream channel and functioning floodplain.

The general approach for restoration in identified Restoration Areas will be to reconstruct a floodplain and stream channel within this floodplain and divert the stream into this newly created habitat and plug the old channel once construction is complete (see attached 80% Design Sheets). The newly constructed stream channel would be vegetated using 2 principal methods. First native vegetation (i.e., sod mats and mature willow plants) would be transplanted to establish stream banks on approximately 30% of reconstructed stream reaches (this number may be adjusted during final design stage). These materials will be collected from the exiting stream banks or other areas in or adjacent to French Gulch. Using existing plants will jumpstart the revegetation of the constructed stream banks and floodplain. The other 70% of stream banks would receive a bioengineered treatment. These banks of the stream would be constructed using a coir fabric wrapped soil lift planted with native grasses and sedges and willow stakes (See attached 80% plan drawings, sheet D-1). In addition to these 2 techniques, there are areas in Restoration Areas 1 and 2 where the channel would be relocated to areas that have a more intact floodplain with existing riparian vegetation. In these areas only minor excavation would be required to establish a stream channel and floodplain and there would be no need to perform extensive riparian plantings because adequate riparian vegetation already exists. In Restoration Areas 1 and 2 leveling of gravel piles in the upland areas away from the newly created stream and floodplain will be limited due to the requirement to preserve the historical significance of the area. Additional habitat enhancements would be made to reaches of the stream not in the Restoration Areas 1-5 that were less impacted by mining or that have recovered but still lack diversity of aquatic habitat. In these areas, minor improvements would be made such as pool enhancement, the addition of woody debris and minor channel changes. This work would be done primarily by hand crews or the use of small machinery such as spider or mini excavator to limit the impacts on existing vegetation. In addition to completing the work in Restoration Areas 1-5, the culvert at the head of the project area would be removed and replaced with step pool structures (See 80% Design Sheet C8). The stream channel work in Restoration Reach 2 also includes relocating a section of the road out of the floodplain to the north to allow for floodplain restoration.

The French Creek watershed has been impacted substantially by factors other than placer mining. The French Gulch placer mining restoration is part of a larger watershed restoration project to restore the impacts of various activities in the drainage including mining, smelting,

logging, grazing and non-native species introduction. Atmospheric deposition of metals and SO_2 from the Anaconda smelting operations have resulted in significant erosion in the headwaters of California Creek, a tributary to French Creek. Past logging and grazing practices have also significantly affected the landscape. Projects are currently underway to restore the areas affected by these practices. The Big Hole Watershed Committee who is a partner on this project has secured funds to support the reduction of sediment and wetland restoration in California Creek in partnership NRDP beginning in 2014 which is expected to reduce sediment loading to the stream. Grazing practices are being been altered resulting in improved riparian conditions and logging is done in more sustainable manner. A 2-mile section of Highway 569 is being relocated by the Montana Department of Transportation from the riparian area of French Creek immediately downstream of French Gulch to an adjacent upland area away from the stream. The relocation of the highway will allow us to relocate the existing crossing of French Gulch under the highway from an area heavily impacted by placer tails to an adjacent area with a more intact floodplain. A native fish project is also scheduled for the drainage where native Arctic grayling and westslope cutthroat trout would be restored to the entire French Creek drainage (38 miles of stream, FFIP funded the fish barrier in 2013). As these projects proceed and stream habitat conditions and water quality improve, it is expected that the fishery in French Creek will improve dramatically. *French Creek will be the largest intact native fish assemblage in the Big Hole drainage and the second largest in the upper Missouri River.*

D. Length of stream or size of lake that will be treated: 8,076 ft

E. Project Budget:

Grant Request (Dollars): $ $130,000

Contribution by Applicant (Dollars): $ _____ In-kind $ _____

(salaries of government employees are not considered as matching contributions)

Contribution from other Sources (Dollars): $ 908,561 In-kind $ _____

(attach verification - See page 2 budget template)

Total Project Cost: $ 1,108,687

F. Attach itemized (line item) budget – see template

G. Attach specific project plans, detailed sketches, plan views, photographs, maps, evidence of landowner consent, evidence of public support, and/or other information necessary to evaluate the merits of the project. If project involves water leasing or water salvage complete supplemental questionnaire (fwp.mt.gov/habitat/futurefisheries/supplement2.doc).

H. Attach land management and maintenance plans that will ensure protection of the reclaimed area.

III. PROJECT BENEFITS*

A. What species of fish will benefit from this project?:

Arctic grayling and westslope cutthroat trout

B. How will the project protect or enhance wild fish habitat?:

The French Gulch project will enhance highly degraded habitat resulting from past placer mining activities. Placer mining has resulted in a straightened and confined stream channel. The newly constructed channel will have a functioning floodplain with a lower gradient and more sinuous channel. The lower gradient and more sinuous channel will allow for deposition of spawning sized gravels and the creation of spawning areas. Further the new sinuous channel will have self-maintaining pools which are severely lacking in mining impacted reaches. A functioning floodplain will allow the stream to naturally migrate back and forth through time which will aid in natural stream function and aquatic habitat creation and maintenance. Currently the stream channel is "locked" into its configuration because of the large gravel spoil piles. It is likely that once the habitat in the stream is restored it could harbor double the number of fish it currently contains and the stream would also become an important spawning and rearing tributary for fluvial cutthroat trout and Arctic grayling from French Creek.

C. Will the project improve fish populations and/or fishing? To what extent?:

This project could potentially double the amount of trout and/or grayling in French Gulch. Because of the severely degraded habitat and lack of pools, the fishery in French Gulch is limited. Once the habitat is restored and the number and quality of pools and spawning habitat dramatically improved, the numbers of fish in the stream should increase dramatically. Also, if fluvial fish from French Creek move into French Gulch to spawn, the fishery in the mainstem creek could also benefit. Further, the entire project is located on the Mount Haggin Wildlife Management Area and is very accessible to anglers.

D. Will the project increase public fishing opportunity for wild fish and, if so, how?:

The public currently has unrestricted opportunity to fish in French Gulch and French Creek. The public will see improved fishing in the stream once the project is complete and the fish have colonized the new higher quality habitat.

E. If the project requires maintenance, what is your time commitment to this project?:

There is the potential for maintenance if a large scale flow event occurs within the first 2-3 years after the habitat is constructed and while permanent vegetation becomes established. A large flood could result in the erosion of the newly constructed channel. To mitigate for this possibility we have employed 2 different techniques for re-establishing stream banks in the newly created channel. One (native sods) which would use transplanted material to form the stream banks and the other is a bioengineered bank with coir fabric and willow cuttings. It is likely that transplanted vegetation will become rooted more quickly than willow cuttings and seeded vegetation but the coiir wrapped soil lifts also provide a measure of protection from erosion in high flows. It is our intent to use soft techniques to establish the new banks of the stream so that through time the stream is deformable and able to adjust through time. Using these 2 techniques we hope to reduce the risk of catastrophic failure of the reconstructed channel if a large scale flood occurs within the first year or two after construction. With a newly formed floodplain and access of this floodplain to ground water it is anticipated that natural vegetation will quickly become established. While such a flood even would be devastating over the short term, the restoration of a functioning floodplain will allow the stream to establish a more appropriate stream channel with meander bends and pools on its own, which is not currently possible due to the placer mining spoil piles.

F. What was the cause of habitat degradation in the area of this project and how will the project correct the cause?:

The cause of habitat degradation in the area is placer mining for gold. Phillip and Nelson Bissonett discovered gold at French Creek in 1864, and a typical gold rush ensued. The first placers were worked in the lower two and a half miles of French Gulch in 1864. During the early years of placer mining, the work done in French gulch was with pans, rockers and small sluices which is why some reaches of the stream have fewer visible impacts today of mining other than a straightened stream channel. By the 1880s the active claims had about 15 feet of gravel to be removed to get to bedrock where the best deposits were. Also starting in the 1880s, bars (benches) up to 50 feet above the drainage were first worked with hydraulic methods. Ditches were engineered to deliver water from nearby Moose, First Chance, French and American creeks to create sufficient head pressure to work several hydraulic giants with 3 inch nozzles and an Evans Hydraulic Elevator. In the upper gulch, upstream of the proposed restoration area, a steam hoist or “Donkey” and derrick were employed raising and moving boulders out of the way. In 1900 the Allen Gold Mining Company added a floating dredge to French Creek which consisted of a boat or scow with appliances for digging and elevating material in front of it, sorting and washing it, collecting the gold and discharging the waste or tailing to the rear of the boat. Placer mining was more or less continuous, at varying scales and by various methods, from 1864 to 1911.

All of the stream gravels from the head of the gulch to the confluence with French Creek were mined down to the bedrock. The drainage bottom currently can best be described as a series of gravel piles, trenches and bars through which the creek meanders and bifurcates. Seasonal run off has leveled off the placer tails in some areas, while large, linear dredge piles remain in the margins of the lower half of the project corridor. Adjacent slopes, mined by hydraulic giants, have experienced tremendous erosion. Two hard rock mines were also in operation at the headwaters of the drainage at French Town until the early 1900’s. The Anaconda Copper Company owned the proposed project area until FWP ownership in 1976.

FWP owns the mineral rights as well as the land on the Mt. Haggin Wildlife Management Area so there is not threat of future placer mining in the area. Recreational gold panning still occurs in the stream but it is unlawful to dig any material from banks or uplands.

The proposed project will restore a functioning floodplain and channel to the placer mined reaches of the lower 3 miles of French Gulch. While it is not possible to restore the entire valley bottom to pre-mining conditions because of both historical concerns and financial infeasibility, we feel the approach proposed herein provides the largest potential benefit while balancing impacts to cultural resources and economic concerns.

G. What public benefits will be realized from this project?:

Montanans will directly benefit from this project through the restoration of aquatic and riparian habitat that belongs to them. Mount Haggin is a state owned Wildlife Management Area. The natural resource damage that occurred in the French Gulch drainage occurred many decades before state ownership. The goals of the Wildlife Management Area are to conserve critical wildlife habitat for use by the hunters, angler and recreationists of Montana. The habitat in French Gulch has been severely degraded by past mining and this restoration will repair, to the extent practicable, the impacts that have not naturally healed. Once restored the landscape will more closely reflect conditions prior to mining while still preserving some mining features of the area that reflect the historical use of the drainage and improved habitat will lead to improved fish and other wildlife populations. It is anticipated that the fish population in French Gulch could double with improvements in stream habitat. It is also anticipated that migratory fish from French Creek will use the stream for spawning and rearing and therefore, the fish population and fishing will improve in French Creek as well. Westslope cutthroat trout and Arctic grayling are slated to be restored to the French Creek drainage including French Gulch. Both species are species of concern in Montana and have been petitioned for listing under the Endangered Species Act. Large scale restoration projects such as the French Creek watershed project will aid in conserving these species and lessen the chances that they will warrant listing as a Threatened or Endangered Species and preventing the listing of these species will benefit all Montanan's.

H. Will the project interfere with water or property rights of adjacent landowners? (explain):

No, the entire project is located on public property (FWP Mt Haggin Wildlife Management Area). There are no patented mining claims on the creek nor are there any active unpatented claims.

I. Will the project result in the development of commercial recreational use on the site?: (explain):

No

J. Is this project associated with the reclamation of past mining activity?:

Yes

Each approved project sponsor must enter into a written agreement with the Department specifying terms and duration of the project.

IV. AUTHORIZING STATEMENT

I (we) hereby declare that the information and all statements to this application are true, complete, and accurate to the best of my (our) knowledge and that the project or activity complies with rules of the Future Fisheries Improvement Program.

Applicant Signature: Jennifer L Downey Date: 11/30/2015

Sponsor (if applicable):

***Highlighted boxes will automatically expand.**

Mail To: **Montana Fish, Wildlife & Parks**
Habitat Protection Bureau
PO Box 200701
Helena, MT 59620-0701

E-mail To: **Michelle McGree**
mmcgree@mt.gov

Incomplete or late applications will be returned to applicant.
Applications may be rejected if this form is modified.

*****Applications may be submitted at anytime, but must be received by the Future Fisheries Program office in Helena before December 1 and June 1 of each year to be considered for the subsequent funding period.*****

BUDGET TEMPLATE SHEET FOR FUTURE FISHERIES PROGRAM APPLICATIONS
(Revised 11/30/2015)

WORK ITEMS (ITEMIZE BY CATEGORY)	NUMBER OF UNITS	UNIT DESCRIPTION*	COST/UNIT	TOTAL COST	CONTRIBUTIONS			
					FUTURE FISHERIES REQUEST	IN-KIND SERVICES	OTHER CASH	TOTAL
Personnel								
Survey								$ -
Design (MM)				$ 36,902.00			36,902.00	$ 36,902.00
Engineering								$ -
Permitting								$ -
Oversight (MM)				$ 63,530.00			63,530.00	$ 63,530.00
Admin (DLV CD)				$ 15,000.00			15,000.00	$ 15,000.00
Admin (MFWP)				$ 3,307.00			3,307.00	
Project Management/Admin (BHWC)				$ 50,000.00	5,200.00		44,800.00	$ 50,000.00
Travel								
Mileage				$ -				$ -
Per diem				$ -				$ -
Construction Materials								
Restoration Reach 1				$ 223,829.00			223,829.00	$ 223,829.00
Restoration Reach 2				$ 441,065.00			441,065.00	$ 441,065.00
Restoration Reach 3				$ 32,080.00	14,800.00		17,280.00	$ 32,080.00
Restoration Reach 4				$ 97,287.00	40,000.00		57,287.00	$ 97,287.00
Restoration Reach 5				$ 78,293.00	50,000.00		28,293.00	$ 78,293.00
Culvert Removal				$ 41,456.00	20,000.00		21,456.00	$ 41,456.00
Habitat Improvement Areas				$ 25,938.00			25,938.00	$ 25,938.00
				$ -				$ -
				$ -				$ -
Equipment								
				$ -				$ -
				$ -				$ -
				$ -				$ -
				$ -				$ -
Mobilization								
Mobilization and Demob const included in each reach task								$ -
Contingency is 10% & included in each construction task cost.								$ -
				$ -				$ -
				$ -				$ -
				$ -				$ -

BUDGET TEMPLATE SHEET FOR FUTURE FISHERIES PROGRAM APPLICATIONS
(Revised 11/30/2015)

TOTALS	$ 1,108,687.00	$ 130,000.00	$ -	$ 978,687.00	$ 1,105,380.00

*Units = feet, hours, inches, lump sum, etc.

MATCHING CONTRIBUTIONS

CONTRIBUTOR	IN-KIND	CASH	TOTAL	Verified? (Y/N)
Reclamation Development Grant	$ -	$ 500,000.00	$ 500,000.00	Y
FFIP (1)	$ -	$ 114,061.00	$ 114,061.00	Y
DEQ 319 Grant (Funds allocated to French Gulch Design/Construction)	$ -	$ 113,000.00	$ 113,000.00	Y
FFIP (2)	$ -	$ 90,000.00	$ 90,000.00	Y
In-kind labor (To be determined with final design)	$ 12,500.00		$ 12,500.00	
BLM		$ 12,000.00		Y
George Grant TU		$ 5,000.00	$ 5,000.00	Y
US FWS Fish Passage Program		$ 65,000.00	$ 65,000.00	Y
Montana Chapter AFS	$ -	$ 3,000.00	$ 3,000.00	Y
Patagonia		$ 6,000.00	$ 6,000.00	Y
DEQ 319 Unspent Funds Request	$ -	$ 70,000.00	$ 70,000.00	
FFIP (3)		$ 130,000.00	$ 130,000.00	
Total	$ -	$ -	$ 1,108,561.00	